

## REMARKS

As a preliminary matter, Applicants thank the Examiner for the acknowledgment of allowable subject matter.

Claims 1-2, 4, and 33-34 stand rejected under 35 USC 102(e) as being anticipated by Yamada et al. (U.S. 6,067,141). Applicants respectfully traverse this rejection because the cited reference does not disclose (or suggest) a liquid crystal display apparatus at least one boundary of alignment of liquid crystal domains on a linearly arranged alignment control structure, as in claim 1 of the present invention, as amended.

Yamada discloses a liquid crystal display apparatus having two substrates 50, 60, a liquid crystal layer 69, and column structures 51. The column structures 51 are disclosed to always extend across the entire distance between the two substrates 50, 60. Yamada neither teaches nor suggests any alignment of liquid crystal domains on the column structure 51, or between the structure 51 and one of the substrates 50 or 60.

In contrast, claim 1 of the present invention as amended recites, among other things, at least one boundary of alignment of liquid crystal domains on a linearly arranged alignment control structure. In other words, for the boundary of alignment of liquid crystal domains to be on the alignment control structure, there must be some liquid crystals arranged between the alignment control structure and at least one of the substrates. Yamada neither teaches nor suggests any such features as in the present invention.

Yamada specifically teaches that the column structures 51 extend all the way between the substrates 50, 60, and prevent any liquid crystal domains from aligning on the

structure 51 between the structure 51 and either substrate. In the present invention, on the other hand, at least one boundary of liquid crystal domains aligns on the alignment control structure. Accordingly, since Yamada does not show this feature of the present invention, the Section 102 rejection of claim 1 is respectfully traversed for at least these reasons.

Claims 2 and 33 have been cancelled without prejudice, rendering the Section 102 rejection with respect to these two claims now moot.

Claims 4 and 34 depend on either directly or indirectly from independent claim 1, and therefore include all of the features of the base claim, plus additional features. Accordingly, the Section 102 rejection of claims 4 and 34 based on Yamada is respectfully traversed for at least the reasons discussed above in traversing the rejection of independent claim 1.

Additionally, claims 3, 5-7, and 24-27 all depend indirectly from independent claim 1 of the present invention, and should therefore also be in condition for allowance, as being dependent from a generic, or linking, claim. Similarly, claim 11 of the present invention should also be condition for allowance as being indirectly dependent from allowed claim 8.

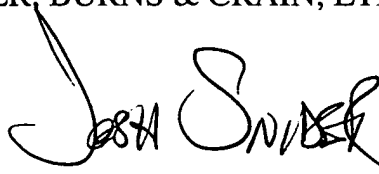
Attached hereto is a marked-up version of the changes made to the claims by the current Amendment, captioned "Version with markings to show changes made."

For all the foregoing reasons, Applicants submit that this Application, including claims 1, 3-13, 24-27, 34-35, and 37, is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned Attorney if an interview would expedite prosecution.

Respectfully submitted,

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**Version with Markings to Show Changes Made**

**IN THE CLAIMS:**

Please amend claims 1, 3-7, 12 and 34-35 as follows:

1                   1.     (Twice Amended) A liquid crystal display apparatus comprising:  
2                   a pair of substrates having electrodes and vertical alignment layers; ~~and~~  
3                   a liquid crystal having a negative anisotropy or dielectric constant and inserted  
4                   between said pair of substrates;  
5                   at least one of said substrates having a linearly arranged alignment control  
6                   structure for liquid crystal domains; and  
7                   at least one of said substrates having means for forming at least one boundary  
8                   of alignment of liquid crystal ~~(LC)~~ domains on said linearly arranged alignment control  
9                   structure at a fixed position.

1                   3.     (Amended) A liquid crystal display apparatus as described in claim ~~4~~  
2                   35, characterized in that said constituent unit of said linearly arranged structures have  
3                   substantially a uniform shape and are divided from each other by a change in shape or  
4                   cutting.

1                   4.     (Amended) A liquid crystal display apparatus as described in claim 2  
2     35, characterized in that the constituent unites of the linearly arranged structures of one of  
3     the substrates and the constituent units of the linearly arranged structures of the other  
4     substrate extend in parallel to each other.

1                   5.     (Amended) A liquid crystal display apparatus as described in claim 2  
2     35, characterized in that the constituent units of the linearly arranged structures of one of the  
3     substrates and the constituent units of the linearly arranged structures of the other substrate  
4     extend in parallel to each other and are shifted from each other.

1                   6.     (Amended) A liquid crystal display apparatus as described in claim 2  
2     35, characterized in that the constituent units of the linearly arranged structures of each  
3     substrate have different lengths.

1                   7.     (Amended) A liquid crystal display apparatus as described in claim 2  
2     35, characterized in that the constituent units of the linearly arranged structures of each  
3     substrate are arranged in spaced relation with each other, and the constituent units of the  
4     linearly arranged structures of constituent units of the linearly arranged structures of the  
5     other substrate.

1                    12.    (Twice Amended)    A liquid crystal display apparatus as described in  
2    claim ~~36~~ 35, comprising:

3                    alignment control structures arranged in each of said pair of substrates for  
4    controlling alignment of the liquid crystal;

5                    wherein the alignment control structures of one substrate are shifted from the  
6    alignment control structures of the other substrate, as viewed in the direction normal to said  
7    one substrate, and each of said one substrate and said other substrate has means for forming a  
8    boundary of alignment of the liquid crystal molecules at fixed positions with respect to the  
9    alignment control structures of the opposed substrate, upon voltage application.

1                    34.    (Amended)    A liquid crystal display apparatus as described in claim ~~33~~  
2    1, wherein said alignment control structures and means arranged on said substrates  
3    comprises a plurality of constituent units, one constituent unit comprising at least a part of  
4    said alignment control structure for said LC domains and at least a part of said means for  
5    forming a boundary of alignment of the liquid crystal domains.

1                    35.    (New) A liquid crystal display apparatus as described in claim 33 1,  
2    wherein said at least one of said substrates has at least one of means for forming a boundary  
3    of alignment of a first type in which all liquid crystal molecules around a point are directed  
4    to said point, and means for forming a boundary of alignment of a second type in which a  
5    part of the liquid crystal molecules around a point are directed to said point and the other part  
6    of the liquid crystal molecules around said point are directed from said point in the opposite  
7    sense to that of said part of the liquid crystal molecules.

1                    37.    (New) The liquid crystal display apparatus as described in claim 1,  
2    wherein said means for forming at least one boundary being located on or near said linearly  
3    arranged alignment control structured, as viewed in a direction normal to said substrates.